

102.12 - Nickel Base Alloys (chip, disk, and granule forms)

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

| SRM | 349a | 861 | 864 | 865 | 882 | 897 | 899 | 1159 | 1160 | 1243 | 1244 | C1248 | 1249 | 1775 | 2175 | C2402 |
|---------------|------------------|---|---------------------------------|---------|--|---------------------|---------------------|--|-------------------|---------------------------------------|-------------------------------------|--------|---|--------------------------|--------------------------|---------------------|
| Description | | | Nickel Alloy UNS N06600 | | Nickel-Copper Alloy (65Ni-31Cu-3Al) (granule form) | | | Electronic and Magnetic Alloy Standard | Elec/Mag Ni-Mo-Fe | Ni-Cr-Co Alloy UNS N07001 (disk form) | Nickel Alloy UNS N06600 (disk form) | | Ni-Cr-Fe-Nb-Mo Alloy UNS N07718 (disk form) | Refractory Alloy MP-35-N | Refractory Alloy MP-35-N | |
| Unit of Issue | Waspaloy (150 g) | Nickel-based Superalloy PWA 1484 (chip form) (50 g) | Inconel 625 (chip form) (100 g) | (150 g) | (100 g) | Tracealloy A (35 g) | Tracealloy C (35 g) | (disk) | (disk) | (disk) | (disk) | (disk) | (disk) | (disk) | (150 g) | Hastelloy 7C (disk) |

Concentration are expressed as mass fraction, in % (unless noted by an asterisk * for mg/kg).

| | | | | | | | | | | | | | | | |
|----------------|-------|--------|---------|----------|--------|--------|-------|-------|-------|--------|-----------|--------|--------|----------|-------|
| Aluminum (Al) | 1.23 | 0.252 | 0.21 | 2.845 | (2) | (2) | | 1.23 | 0.252 | 0.009 | 0.5682 | 0.024 | 0.024 | | |
| Antimony (Sb) | | | | | 1.6* | 1.53* | | | | | | | | 0.00030 | |
| Arsenic (As) | | 19.0* | | (0.0001) | | | | | | 19.0* | | | | 0.0013 | |
| Bismuth (Bi) | | | | | 0.55* | 0.24* | | | | | | | | | |
| Boron (B) | 0.005 | 28.3* | <0.001 | (0.0001) | (0.01) | (0.01) | | 49.4* | 28.3* | | 0.0023 | 0.0097 | 0.0097 | (0.0004) | |
| Carbon (C) | 0.035 | 0.063 | 0.037 | 0.0065 | (0.12) | (0.12) | 0.007 | 0.019 | 0.024 | 0.063 | 0.266 | 0.0380 | 0.0051 | 0.0051 | 0.010 |
| Chromium (Cr) | 19.3 | 15.74 | 21.9 | (0.0001) | (12) | (12) | 0.06 | 0.05 | 19.05 | 15.74 | 0.095 | 18.472 | 20.4 | 20.4 | 16.15 |
| Cobalt (Co) | 12.46 | 0.0602 | 0.072 | (0.007) | (8.5) | (8.5) | 0.022 | 0.054 | 12.39 | 0.0602 | | 0.3371 | 33.3 | 33.3 | 1.50 |
| Copper (Cu) | 0.007 | 0.255 | 0.36 | 31.035 | | | 0.038 | 0.021 | 63* | 0.255 | 29.80 | 0.1402 | 0.0046 | 0.0046 | 0.19 |
| Gallium (Ga) | | | (0.012) | | 6.3* | 6.0* | | | | | | | | 0.0019 | |
| Hafnium (Hf) | | | | | (1.2) | (1.2) | | | | | | | | | |
| Iron (Fe) | 1.15 | 9.63 | 4.5 | 0.0093 | | | 51.0 | 14.3 | 0.776 | 9.63 | 2.10 | 17.693 | 0.91 | 0.91 | 7.3 |
| Lead (Pb) | | 2.27* | | (0.0006) | 11.48* | 3.928* | | | | 2.27* | 3.8 mg/kg | | | | |
| Magnesium (Mg) | | 138.3* | | (0.001) | | | | | | 138.3* | | | | 0.0012 | |
| Manganese (Mn) | 0.019 | 0.288 | 0.18 | (0.0007) | | | 0.305 | 0.550 | 73.0* | 0.288 | 0.31 | 0.109 | 0.0121 | 0.0121 | 0.64 |

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| | | | | | | | | | | | | | | | |
|-----------------|--------|-----------|----------|----------|--------|--------|-------|-------|----------|-----------|--------|---------|---------|---------|---------|
| Molybdenum (Mo) | 4.25 | 0.204 | 8.6 | | | 0.010 | 4.35 | 4.226 | 0.204 | 0.006 | 3.112 | 9.508 | 9.508 | 17.1 | |
| Nickel (Ni) | 58.1 | 73.09 | 59.5 | 65.25 | (Bal) | (Bal) | 48.2 | 80.3 | 58.782 | 73.09 | 65.75 | 53.29 | 34.91 | 34.91 | 51.5 |
| Niobium (Nb) | (0.05) | 0.126 | 3.5 | | (0.9) | (0.9) | | | 0.0286 | 0.126 | | 5.196 | (0.03) | (0.03) | (<0.01) |
| Nitrogen (N) | | (0.01) | | | | | | | (0.01) | | | | (0.002) | (0.002) | |
| Phosphorus (P) | 0.003 | 0.001271 | 0.011 | 0.012 | | | 0.003 | 0.003 | 31.7* | 0.011 | 0.002 | 0.0134 | 0.0006 | 0.0006 | 0.007 |
| Selenium (Se) | | | (0.0002) | | 9.29* | 9.36* | | | | | | | | | |
| Silicon (Si) | 0.018 | 0.114 | 0.41 | 0.006 | | | 0.32 | 0.37 | 0.0192 | 0.114 | 1.61 | 0.120 | (0.02) | (0.02) | 0.85 |
| Silver (Ag) | | | (0.0004) | | 0.9* | 0.8* | | | | | | | | | |
| Sulfur (S) | 0.0024 | 0.0000561 | 0.0028 | 0.001 | 0.0014 | | 0.003 | 0.001 | 21.7* | 0.0028 | 0.0008 | 0.00064 | 0.0013 | 0.0013 | 0.018 |
| Tantalum (Ta) | | | | | (1.75) | (1.75) | | | (0.0003) | | | | 0.0027 | | |
| Tellurium (Te) | | | | | 1.060* | 5.72* | | | | | | | | | |
| Thallium (Tl) | | 0.0029* | | | 0.536* | 0.273* | | | 0.0029* | | | | | | |
| Tin (Sn) | | 7.4* | | (0.003) | 4.2* | 4.2* | | | 7.4* | 1.1 mg/kg | | 0.0024 | | | (0.001) |
| Titanium (Ti) | 3.06 | 0.251 | 0.28 | 0.565 | (2) | (2) | | | 3.054 | 0.251 | | 0.959 | | | |
| Tungsten (W) | (0.06) | | | | (1.75) | (1.75) | | | 0.0139 | | | 0.0846 | (0.02) | (0.02) | 4.29 |
| Vanadium (V) | 0.12 | 0.0327 | | (0.0001) | | | | | 0.1043 | 0.0327 | | 0.0338 | 0.0095 | 0.0095 | 0.22 |

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| | | |
|-----------|----------|---------|
| Zinc (Zn) | (0.0005) | 3 mg/kg |
|-----------|----------|---------|

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

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|-------------------|------|-------|-------|-------|------|--------|
| Zirconium (Zr) | 3.7* | (0.1) | (0.1) | 0.053 | 3.7* | 0.0029 |
|-------------------|------|-------|-------|-------|------|--------|

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